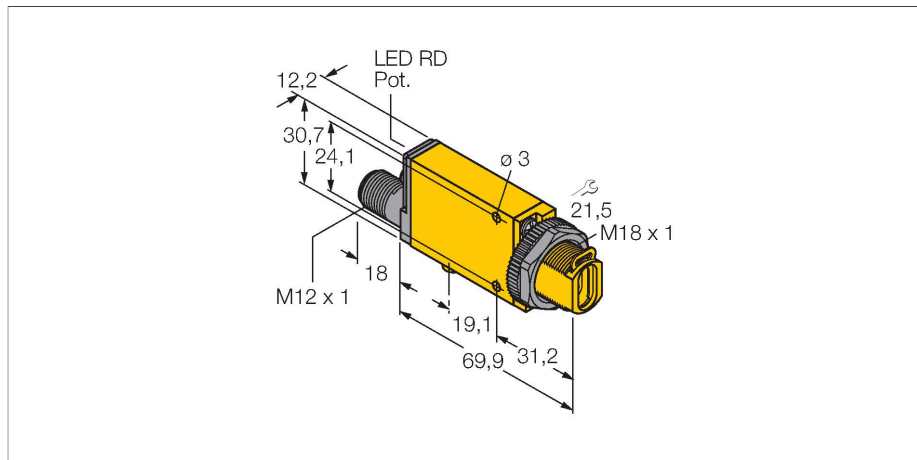


# MIAD9FQ

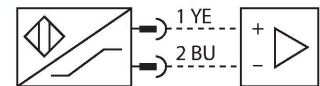
## Photoelectric Sensor – Photoelectric Sensor for Glass Fibers



### Features

- Metallic optical fibers must be grounded
- M12 × 1 connector, 4-pin
- Degree of protection IP67
- Sensitivity adjusted via potentiometer
- Alignment indicator
- Operating voltage: 5...15 VDC (NAMUR)
- NAMUR output in accordance with DIN 19234 (IEC/EN 60947-5-6)
- ATEX category II 1 G, Ex zone 0

### Wiring diagram



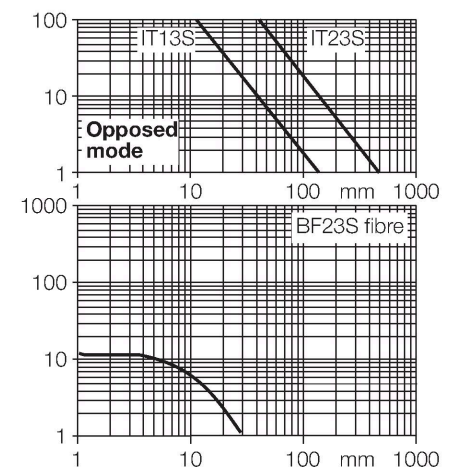
### Technical data

|                                  |   |
|----------------------------------|---|
| Type                             | MIAD9FQ                                 |
| ID                               | 3034626                                 |
| <b>Optical data</b>              |   |
| Function                         | Fiber optic sensor                      |
| Operating mode                   | Glass fiber                             |
| Fiber-optic type                 | glass                                   |
| Light type                       | IR                                      |
| Wavelength                       | 880 nm                                  |
| <b>Electrical data</b>           |   |
| Voltage                          | Nom. 8.2 VDC                            |
| Current consumption non-actuated | ≤ 1.2 mA                                |
| Actuated current consumption     | ≥ 2.1 mA                                |
| Output function                  | Light operation, NAMUR                  |
| Switching frequency              | ≤ 100 Hz                                |
| Response time typical            | < 5 ms                                  |
| Setting option                   | Potentiometer                           |
| <b>Mechanical data</b>           |   |
| Design                           | Rectangular with thread, Mini Beam      |
| Dimensions                       | 84 x 12.3 x 30.7 mm                     |
| Housing material                 | Plastic, Thermoplastic material, Yellow |
| Electrical connection            | Connector, M12 × 1, PVC                 |
| Number of cores                  | 4                                       |
| Ambient temperature              | -40...+70 °C                            |
| Relative humidity                | 0...90 %                                |
| Protection class                 | IP67                                    |
| Special features                 | Wash down                               |
| Switching state                  | LED, Red                                |

### Functional principle

Glass or plastic fibers are the optimum choice for high-temperature applications and limited spaces. Optical fibers transfer the light from the sensor to a remote object. Individual fibers are used for opposed sensing mode, whereas bifurcated fibers are suited for diffuse sensing mode.

Excess gain curve  
Excess gain in relation to distance

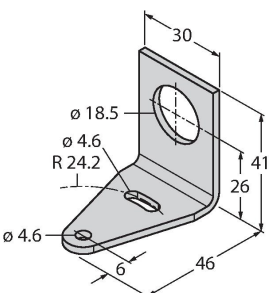


## Technical data

|  |  |
|--|--|
| Excess gain indication                     | LED, red, flashing                     |
| <b>Tests/approvals</b>                     |  |
| Approvals                                  | CE, FM, CSA                            |
| Approvals                                  | ATEX II 1G<br>ATEX II 2G<br>ATEX II 3G |
| Device marking                             | ⊕ II 1 G Ex ia IIC T5 Ga               |
| Ignition protection category               | Ex ia IIC T5 Ga                        |
| Ex approval acc. to conformity certificate | FM12ATEX0094X                          |

## Accessories

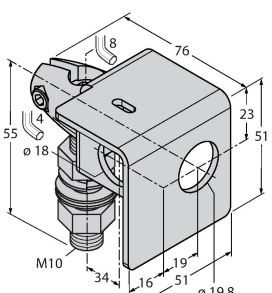
**SMB18A** 3033200



Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread

Technical drawing showing dimensions: 30, 41, 26, 46, 6, 4.6, 18.5, 4.6, R24.2.

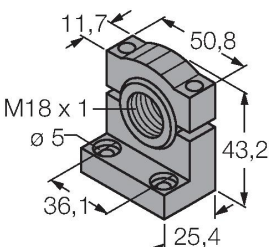
**SMB18AFAM10** 3012558



Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm

Technical drawing showing dimensions: 76, 23, 51, 19, 16, 51, 19.8, 18, 4, 8, 55, 34, 10, M10.

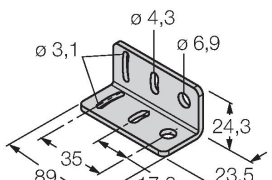
**SMB18SF** 3052519



Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable

Technical drawing showing dimensions: 11.7, 50.8, 43.2, 25.4, 36.1, 5, M18 x 1.

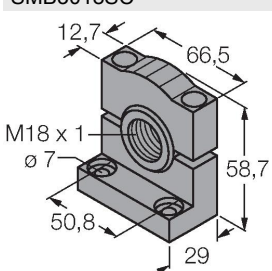
**SMB312B** 3025519



Mounting bracket, stainless steel, for MINI-BEAM NAMUR

Technical drawing showing dimensions: 89, 35, 17.3, 23.5, 24.3, 6.9, 4.3, 3.1.

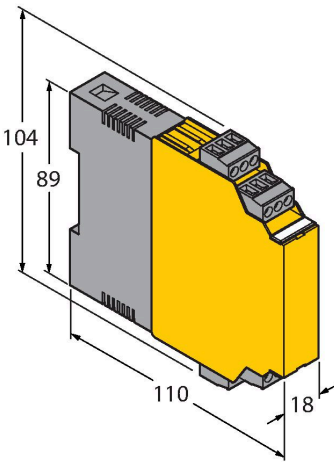
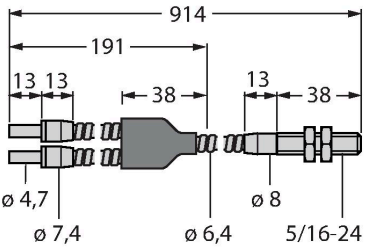
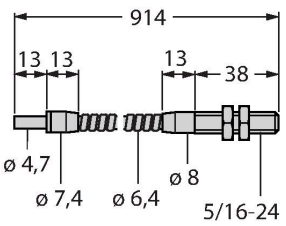
**SMB3018SC** 3053952



Mounting bracket, PTB black, for sensors with 18 mm thread

Technical drawing showing dimensions: 12.7, 66.5, 58.7, 29, 50.8, 7, M18 x 1.

## Accessories

| Dimension drawing  | Type       | ID      |   |
|--|------------|---------|---|
|  <p>Technical drawing of the IM1-22EX-R module. It shows a perspective view of a yellow and grey rectangular component. Dimensions are indicated: total height 104 mm, height of the main body 89 mm, total width 110 mm, and a specific width of 18 mm at the bottom edge.</p>   | IM1-22EX-R | 7541231 | Isolating switching amplifier, 2-channel; 2 relay outputs; input NAMUR signal; selectable ON/OFF mode for wire-break and short-circuit monitoring; adjustable output mode (NO / NC mode); removable terminal blocks; width 18 mm; universal power supply unit |
|  <p>Technical drawing of the BT23S sensor. It shows a side view of a cylindrical assembly with various diameters and lengths. Dimensions include a total length of 914 mm, a section length of 191 mm, and two 13 mm sections. Diameters are specified as <math>\varnothing 4,7</math>, <math>\varnothing 7,4</math>, <math>\varnothing 6,4</math>, and <math>\varnothing 8</math>. A thread specification of 5/16-24 is also shown.</p> | BT23S      | 3017276 | Glass fiber, sensing mode: Diffuse mode, threaded sleeve (brass), bundle diameter 3.2 mm, flexible stainless steel jacket, ambient temperatures -140... +250 °C   |
|  <p>Technical drawing of the IT23S sensor. It shows a side view of a cylindrical assembly with various diameters and lengths. Dimensions include a total length of 914 mm, two 13 mm sections, and a 38 mm section. Diameters are specified as <math>\varnothing 4,7</math>, <math>\varnothing 7,4</math>, <math>\varnothing 6,4</math>, and <math>\varnothing 8</math>. A thread specification of 5/16-24 is also shown.</p>           | IT23S      | 3017355 | Glass fiber, sensing mode: Opposed mode, threaded sleeve (brass), bundle diameter 3.2 mm, flexible stainless steel jacket, ambient temperatures -140... +250 °C   |

## Operating Instructions

|  |  |
|--|--|
| Intended use   | This device fulfills the directive 94/9/EC and is suited for use in explosion hazardous areas according to EN60079-0:2009, -11:2012, -26:2007. In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.   |
| For use in explosion hazardous areas conform to classification | II 1 G (Group II, Category 1 G, electrical equipment for gaseous atmospheres).   |
| Marking (see device or technical data sheet)                   | ⊕ II 1 G and Ex ia IIC T5 Ga acc. to EN60079-0, -11 and -26  |
| Local admissible ambient temperature                           | -25...+70 °C   |
| Installation/Commissioning                                     | <p>These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas. Please verify that the classification and the marking on the device comply with the actual application conditions.</p> <p>This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values. After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).</p> |
| Installation and mounting instructions                         | Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device. If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields. The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet. In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.  |
| Service/Maintenance  | Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.  |